
FRBSF WEEKLY LETTER

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Korea and Export-Led Growth

South Korea is a well-known example of a nation that has followed a development strategy that explicitly promotes exports. It has done so since the early 1960s with remarkable results. Average annual real GNP growth in Korea was 9.2 percent between 1962 and 1979, and, excepting 1980, has averaged over 7 percent in the 1980s. (The assassination of South Korean President Park in 1979 threw the country into turmoil, and real GNP consequently fell more than 5 percent in 1980). Growth in manufactures has been substantially higher than overall GNP growth, and the growth in export volume has been even more impressive. Export volume rose more than fourfold in the 1960s, tenfold in the 1970s, and doubled during the 1980-1985 period.

Despite Korea's impressive growth record, it remains unclear whether export promotion policies themselves significantly contributed to the success. The economic profession still has not reached a consensus over whether explicit export promoting policies are preferable to more neutral (in terms of not favoring one sector over another) market-oriented liberalization policies. This *Letter* explores the South Korean experience. We conclude that Korea's development strategy has played an important role in its impressive growth record. However, we find evidence that continued reliance on "export-led" growth and expansion of the export sector as a share of real output could soon distort resource allocation to such an extent as actually to prove a net drag on further overall economic expansion.

South Korean development policy

The ideology of the "Export First" Policy in South Korea was established in the first Five-Year Economic Development Plan (1962-66), and was clearly documented in the second Plan. The main policy measures consisted of various administrative supports for export promotion, a preferential tax system, and credit subsidies for export activities. Equally important, export production activities were set free from the traditional all-pervasive protectionist import regime. (Korea continued to restrict materials

imported for production activities oriented to domestic consumption, however.)

The allocation of credit through the banking system was a major channel through which the export sector was given preferential treatment. First, administrative regulations maintained below-market interest rates on bank loans, and, second, those low interest loans were rationed by various government agencies to preferred sectors for export expansion.

Some "leakages" from the tightly controlled banking sector occurred and an unregulated and unsanctioned curb market for funds grew as a consequence. But the net impact of the administratively determined bias of the banking sector, given the limited nature of alternative sources of funds and the general absence of open money and credit markets, was to direct resources in the economy toward export-oriented industries at below-market rates of interest.

One important aspect of Korean export promotion policy in its earlier stages, emphasized by Professor Hong of Seoul University, is that it was an "open-entry" system allowing a new group of entrepreneurs not traditionally engaged in export manufacturing to take full advantage of the new incentive structure. Moreover, the Korean bureaucracy was generally very effective and energetic in carrying out the export promotion policy. Ministry of Trade and Industry (MTI) officials, for example, set annual export targets at the beginning of each year and used all their influence to meet these objectives (expediting the administrative process, strengthening existing export schemes, and exhorting firms to accelerate exports).

In the early 1970s, Korea began to move away from the "open entry" nature of its export promotion strategy. The government began enlarging its scope of selecting prospective industries for special subsidies and increasingly assigned projects to existing, and successful, export firms.

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This growing concentration of export business activities in the hands of a small number of select business groups has not gone uncriticized, however. In fact, rationing of credit in favor of administratively selected industries and firms recently has been blamed for causing numerous distortions in production activity. Moreover, several well-known failures among the group of targeted export industries that was heavily subsidized (nonferrous metal manufacturing, large petrochemical complexes, large fertilizer plants, capital-intensive armament factories, and a gigantic heavy machine factory) generated general criticism of the policy of administrative credit controls. Some observers have begun to argue that the Korean government should start reducing the "excessiveness" of credit rationing by enhancing the role of the market mechanism in resource allocation and thereby increase efficiency in the economy and support growth.

Limits to export-led growth

Chart 1 shows the growth in the share of exports in total production (GNP) in Korea over the last two decades. The export sector has grown from approximately 4 percent of total GNP in 1964 to almost 40 percent in 1985. Clearly, South Korea's export promotion policies have been successful in terms of increasing the share of exports compared to other sectors in the economy. More important, it is also likely that Korea's rapid output expansion, and the policies favoring the export sector, contributed to output growth beyond that which would otherwise have occurred. But even under the best of circumstances, there are good theoretical reasons to support the idea of limits to what export-promoting policies can contribute to overall growth.

Large benefits (i.e., output growth increases) are likely to be associated with development of the export sector when that sector is small in comparison to the rest of the economy. Greater productivity in the export sector and externality effects (when increasing output in the export sector leads to a rise in nonexport output even when the resource commitment in the latter sector is unchanged) are likely to be most pronounced at early stages of economic development.

Reasons typically given for the benefits of export expansion to the nonexport sector include economies of scale, easing of foreign exchange con-

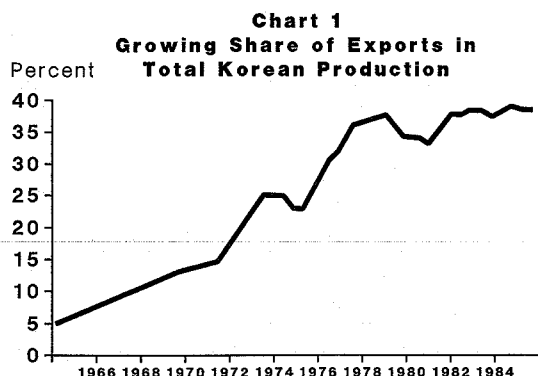
straints, greater incentives for technological improvements and adoption of more efficient management techniques due to foreign competition. Each of these benefits, however, would likely decline as the proportion of exports in total output grows. For example, as export receipts grow, the foreign exchange constraint on buying essential imports to the production process becomes less binding. It is reasonable to presume that foreign exchange constraints may have been binding when export receipts in Korea represented only 4 percent of total GNP. Foreign exchange constraints are less likely to be binding when export receipts represent 40 percent of GNP, however.

Simply put, the larger the proportion of resources devoted to the export sector, the more likely that a point of diminishing returns will eventually be reached. In other words, at some point, continued reliance upon an export-promoting policy bias is likely to become counterproductive, and a more balanced development strategy will be needed to pull the economy forward.

Evidence of diminishing returns

To shed some light on the issue of the limits to export-led growth, Nirvikar Singh and I calculated the combined effects of export sector productivity differentials by estimating a production function for the Korean economy. The production function related output growth to growth in labor and capital inputs as well as benefits associated with potential export expansion. In statistical terms, the diminishing returns argument holds that the contribution to output growth associated with a rise in exports will likely decline with growth in the relative size of the export sector. Following this reasoning, we allowed the externality and productivity differential effects to vary over time as a function of the ratio of exports to GNP.

The results, shown in Chart 2, suggest that the additional contribution to output growth associated with expansion of the export sector was very large at the beginning of the 1960s but has gradually declined. At the beginning of the period (1964), a one-percent rise in the export/GNP ratio contributed almost a one-percent rise in output growth, holding *constant* total resources in the economy. In other words, even after taking into account the contributions to

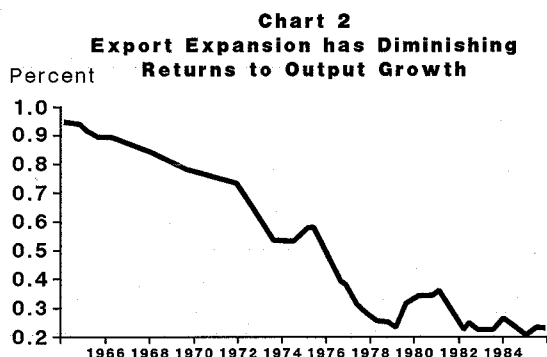


output growth from investment and labor inputs and trend growth, there remained significant effects associated with expanding the export sector. However, these effects are estimated to have declined with expansion of the export sector from one percent in 1964 to around two-tenths of one percent at present. Our research suggests that a further rise in the relative size of the export sector would soon drive this additional export effect to zero.

In short, our research indicates that the fundamental economic principle of diminishing returns also applies to resource commitments that have favored expansion of the export sector relative to the nonexport sector in Korea over the past two decades.

Policy implications

Both economic theory and the results reported here for South Korea suggest that an export-led development strategy could prove very effective during particular stages of industrialization. As



the economy becomes increasingly open to world trade, however, and particularly as exports grow as a share of total production, continued reliance upon an export promotion bias in policy could prove counterproductive.

South Korea's experience suggests that relying upon export expansion as a locomotive of economic development was good economic policy. However, the export share of total output is now close to 40 percent in South Korea. By both historical and international standards this represents an enormous proportion of resources devoted to export production (the share of exports in total Japanese production, for example, is only about 17 percent). At this juncture, it may well be appropriate for South Korea to turn to a more balanced, market-oriented development strategy. Such a strategy could prove the impetus to yet another stage of rapid economic progress.

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BANKING DATA—TWELFTH FEDERAL RESERVE DISTRICT (Dollar amounts in millions)

Selected Assets and Liabilities Large Commercial Banks	Amount Outstanding 11/11/87	Change from 11/4/87	Change from Dollar	11/12/86 Percent ⁷
Loans, Leases and Investments ^{1 2}	209,058	— 168	4,032	1.9
Loans and Leases ^{1 6}	184,712	— 112	585	0.3
Commercial and Industrial	51,250	— 213	403	0.7
Real estate	72,263	172	5,338	7.9
Loans to Individuals	36,883	— 50	— 4,436	— 10.7
Leases	5,420	28	— 129	— 2.3
U.S. Treasury and Agency Securities ²	17,089	— 275	4,037	30.9
Other Securities ²	7,258	— 4	— 590	— 7.5
Total Deposits	207,728	— 1,927	— 3,810	— 1.8
Demand Deposits	52,158	— 2,054	— 5,456	— 9.4
Demand Deposits Adjusted ³	35,112	— 1,442	— 17,834	— 33.6
Other Transaction Balances ⁴	20,331	— 178	1,889	10.2
Total Non-Transaction Balances ⁶	135,239	305	— 243	— 0.1
Money Market Deposit Accounts—Total	44,246	48	— 2,098	— 4.5
Time Deposits in Amounts of \$100,000 or more	31,870	38	— 1,767	— 5.2
Other Liabilities for Borrowed Money ⁵	25,835	— 752	— 882	— 3.3
Two Week Averages of Daily Figures	Period ended 11/2/87	Period ended 10/19/87		
Reserve Position, All Reporting Banks				
Excess Reserves (+)/Deficiency (—)	86	61		
Borrowings	4	22		
Net free reserves (+)/Net borrowed(—)	81	39		

¹ Includes loss reserves, unearned income, excludes interbank loans

² Excludes trading account securities

³ Excludes U.S. government and depository institution deposits and cash items

⁴ ATS, NOW, Super NOW and savings accounts with telephone transfers

⁵ Includes borrowing via FRB, TT&L notes, Fed Funds, RPs and other sources

⁶ Includes items not shown separately

⁷ Annualized percent change